The University of the State of New York
Bulletin to the Schools

VOL. 24 MARCH 15, 1938 NO. 13

Bird Day, April 8th

Eastern Purple Finch

The University of the State of New York
Bulletin to the Schools

VOL. 24 MARCH 15, 1938 NO. 13

The American Egret in the Albany Region

DAYTON STONER, STATE ZOOLOGIST, NEW YORK STATE MUSEUM

Photograph by A. M. Bailey and F. R. Dickinson

Adults, Nest and Young of American Egret. Tallahassee, Florida.

Last August a gentleman called at my office in the State Museum to inquire about "a large, white bird" which he had seen near Albany. He was informed that in all probability it was an American egret, one of the most striking members of the heron family.

Reports from other callers and recent correspondence with observers in various parts of up-state New York indicate that the American egret was more than usually common during the late summer of 1937. Our own observations, to be related in some detail in this article, also imply that during the past season this egret attained an unprecedented peak of abundance in the Albany region.

In eastern United States the American egret now usually breeds from Florida on north to North Carolina. In recent years, however, the breeding range of this bird has been extended still farther north into Maryland and southwestern New Jersey. This may account, in part at least, for its more general prevalence in upper New York State.

The breeding season of this egret commonly lasts from early January in its southernmost range through mid-June farther north. Later on both adult and immature birds have the habit of wandering widely, often northward, and far from their nesting grounds. It is, then, from mid-July on into early autumn that these stately white herons are most likely to be seen in the Albany region.

That the status of the American egret in the Albany and other sections of up-state New

York has changed materially in the past 20 years seems apparent. Eaton, in his Birds of New York (New York State Museum Memoir 12, vol. 1, 1910), designates this bird as an "occasional summer visitant" in the State. In addition he cites 26 specific New York State records for the species between 1856 and 1905, a span of almost 50 years. These records cover widely separated localities from Long Island to Buffalo and the Adirondacks.

For the period 1905 to the present, I have been able to find some twenty additional published records of the occurrence of this egret in up-state New York. E. Bedell, S. C. Bishop and B. H. Bronson have reported on their findings from various points in the Capital District. These and most other observers north of Long Island, however, usually have recorded only one or two birds for any single observation date.

In the late summer of 1937, personal correspondents at Glens Falls, Oneida, Watertown and other points in the State reported the presence of from one to five American egrets in their respective localities. My own 1937 records cover the period from August 1st to October 12th, when Mrs Stoner and I made numerous observations and counts along and in the vicinity of the Hudson and Mohawk rivers near Albany. Our results are condensed below:

Tabular Data on 1937 Observations of the American Egret in the Albany Region

LOCALITY	DATE		NO. EGRETS OBSERVED	LENGTH OF OBSERVATION PERIOD	REMARKS
Troy	August	1	1	5 minutes	Burden pond D. & L. Stoner
Watervliet reservoir	August	6	2	½ hour	13 miles west of Albany D. & L. Stoner
Stockport R. R. station and vicinity	August	15	25	2 hours	Hudson river, 25 miles south of Albany D. & L. Stoner
Stockport R. R. station and vicinity	August	18	15	3 hours	Hudson river, 25 miles south of Albany D. & L. Stoner
Niskayuna and vicinity..	August	20	18	1 hour	Mohawk river, 10 miles northwest of Albany D. & L. Stoner
Stockport R. R. station and vicinity	September	12	6	1 hour	D. & L. Stoner
Niskayuna and vicinity..	September	18	7	1 hour	D. & L. Stoner
Niskayuna and vicinity..	September	22	6	1 hour	D. & L. Stoner
Stockport R. R. station and vicinity	September	29	6	2 hours	D. & L. Stoner
Niskayuna and vicinity..	October	3	3	1 hour	D. & L. Stoner
Stockport R. R. station and vicinity	October	3	14	2 hours	D. & L. Stoner
Niskayuna and vicinity..	October	7	5	1 hour	L. Stoner
Stuyvesant and Stockport R. R. station	October	8	4	3 hours	Hudson river D. & L. Stoner
Stockport R. R. station and vicinity	October	10	none	2 hours	D. & L. Stoner
Niskayuna and vicinity..	October	12	none	1 hour	D. & L. Stoner
Stockport R. R. station and vicinity	October	12	none	2 hours	D. & L. Stoner

While the above counts indicate the actual number of egrets *observed*, they probably do not represent the actual number *present*. Most of the birds we saw were standing or feeding along the grassy and cat-tail bordered banks of the Mohawk and Hudson rivers. No doubt comparable numbers of egrets were concealed in the tall, dense vegetation.

It will be noted from the table that our largest egret count occurred on August 15th. Six of these birds were observed along and flying over the Hudson river between the village of Schodack Landing, 12 miles south of Albany, and the Stockport railroad station, 25 miles south of Albany. One egret was seen in the rushes bordering the river at Stockport station while 18 others were feeding together in a small marsh one-fourth mile north of the station. Our total of 25 American egrets observed on this date within a space of two hours will long remain one of our outstanding ornithological experiences in the Albany region.

With the advent of cooler weather — the first hard frost of the season occurred October 8th — the egrets rather abruptly abandoned their accustomed local haunts. The gun-fire associated with the opening of the duck-hunting season — October 9th — also, no doubt, was responsible for promoting the initial southerly movement.

The records cited substantiate the belief that the American egret was present in more than the usual numbers in the Albany region and adjacent territory during the late summer and early autumn of 1937. Evidence accumulated from this season and preceding ones also points to the conclusion that in the past several years this egret has become increasingly common in the upper Hudson River valley. Perhaps it may be worth while to seek some fundamental reason for this desirable situation.

I believe that Ludlow Griscom supplied it in 1929 when he wrote in The Auk (vol. 46, p. 52), "Thanks to adequate protection in the south this lovely bird is now a regular summer visitor to the coastal marshes [of New York State] . . . While much more irregular inland, it is no longer casual, and indeed occurs now away from the coast far more frequently than it used to occur on the coast ten years ago."

If the once sadly depleted ranks of the American egret can be, under "adequate protection" so considerably augmented within a decade, can not the same type of protection be accorded some of our other birds whose numbers have been reduced largely through lack of it? No doubt our ducks and geese as well as several of our beneficial species of hawks and owls would respond as acceptably. Such a conservation measure is at least worthy of a trial.

Phoebes Versus Tent Caterpillars

B. H. BELKNAP, ASSOCIATE SUPERVISOR, DIVISION OF SCHOOL ADMINISTRATIVE SERVICES, NEW YORK STATE EDUCATION DEPARTMENT

It all began on the first day of April one year ago. I had been listening for days, but on this particular morning the first outdoor sound to greet my ears was the old familiar "Phoe-be," "Phoe-be." True, I had been hearing a similar call for many days, but it consisted of three syllables and was the utterance of one of our winter birds. The genuine call of the phoebe, however, recalled many fond memories.

On leaving the house I saw the source of my delight perched on the roof of the tool shed. While I listened to the repeated call I fancied that I could detect something sad or lonely in the phoebe's two-syllable notes. In this I was not deceived. Day after day the

Photograph by Guy A. Bailey
Courtesy of Bureau of Radio and Visual Aids
Adult Eastern Phoebe

Courtesy of Bureau of Radio and Visual Aids

Nest and Young of Eastern Phoebe

newly arrived friend continued his plaintive call. Robins came, and bluebirds, meadow larks, killdeer, song sparrows and other kindred feathered gentry. The bluebirds even insisted on nesting in a house specially constructed for wrens. After the entrance was enlarged the bluebirds went to work in real family fashion. Still the phoebe stuck to his guns, but not in vain.

One morning about the middle of April I noted a stepping up or an enlivening of the erstwhile mournful call. On peering out toward the old stand I now observed not one phoebe, but two. They were apparently very excited and by the melody exhibited in the call, it was evident that there was much happiness.

On my return from work at the end of the day members of my family informed me that the phoebes apparently had decided to build a nest inside the tool shed. Surely enough, they had selected a narrow strip of wood nailed to the joist overhead to serve as a base for what later proved to be their nest for two of their three hatchings of young phoebes. Their third attempt at nesting and rearing young took place on the cap of one of the pillars of the front porch.

How they worked in building that first nest! Bits of thread planted by us humans for the purpose were soon added to clay, dry blades of grass, tiny twigs and fine feathers. A small side door of the shed was left open day and night so that the family car could be parked in its usual place and doors directly back of the car could be closed. The nest, by the way, was immediately above the car when parked.

As the days and weeks passed the nest served for two hatchings of young birds. The second nesting occurred soon after the first hatching of five young birds had become able to shift for themselves. Following the rearing of the

second hatching of four birds the scene of activities moved to the front porch of the house, where the third and last nesting for the season took place. This endeavor on the part of the parents of the former hatchings resulted in the production of four more young phoebes.

At midsummer it was interesting to observe the phoebes, now nearly mature, flitting about in search of food in the form of insect life. Apparently the greater abundance of such food in and about the trees and shrubs near the house and garden caused the birds to center their attention to that locality.

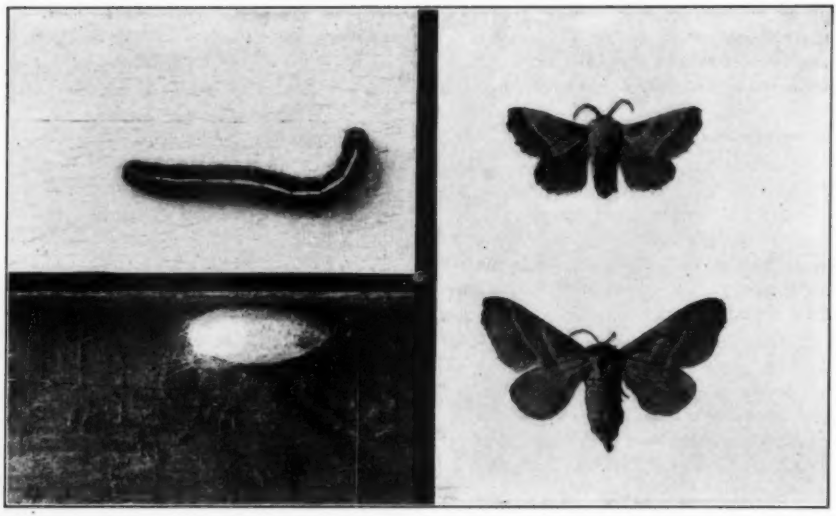
Not all our interest and observation had to do with phoebes, however. The Albany area has for the past several years been infested with tent caterpillars. As early as the last week of March all our fruit trees, some shrubs and wild cherries in hedge rows were sprayed with a concentrated solution of lime sulphur. Egg deposits were present in large numbers. Numerous twigs appeared to have oblong enlargements of a slightly darker color than the bark. Each of these deposits contained from 300 to 400 tent caterpillar eggs.

This early spray destroyed not only fungus growths, but most of the tent caterpillar eggs as well. When the leaves were beginning to show up and the few caterpillars which were hatched began to build their tents a second spray solution was used. This time the solution included lime sulphur in combination with arsenate of lead. The few tents that did appear were wiped out with a roll of cloth attached to a stick and saturated with kerosene oil. This work was done just before dark in the evening when all caterpillars were again in their tents.

A third spray solution, lime sulphur and arsenate of lead, was used just after the blossom petals had fallen. In spite of all this effort on our part late spring and early summer found our garden, lawn, shrubs, shade trees, and the sides of buildings infested with large

Photograph by J. A. Glenn
Courtesy of Bureau of Radio and Visual Aids

Egg Mass, Newly Hatched Larvae and First Tent of Apple Tree Tent Caterpillar



Photograph by J. A. Glenn
Courtesy of Bureau of Radio and Visual Aids

Mature Larva, Cocoon and Moths (Upper, Male; Lower, Female) of the Apple Tree Tent Caterpillar

numbers of fully grown tent caterpillar larvae. These caterpillars had now passed their intense eating period and were in search of suitable places to pupate or pass the dormant stage between larva and adult.

Soon all was quiet on the battle front. In other words, tent caterpillars had completely disappeared and in their place small woolly cocoons were to be seen under sheltering edges of bark on trees, on sheltered edges of overlapping boards and anywhere, in fact, where there was some protection from the weather.

As the adult tent caterpillar moths began to emerge from the pupa stage the battle was on. These little tan colored moths were considered a rare delicacy by the phoebes. I have many times watched the wary brook trout maneuver about the fisherman's offering of flies, but never have I seen such battle formations as presented by the phoebes. I believe that the moths can make even more abrupt turns than can the trout. I also know that they are no match for the phoebe.

The moths, however, had one trick play in their maneuverings. They would fly directly toward a window or screen only to change their course on arriving within inches of such obstructions. Of course, the phoebe in chase usually landed broadside, but continued the chase undaunted. In the end another moth met sudden death. In view of the fact that the female moth is a little larger and somewhat more showy in flight than the male, the object of the chase was more than likely to be a female.

In any event, the dozens of tent caterpillar moths devoured daily represented literally thousands of tent caterpillar eggs not laid and hence the reduction of the tent caterpillar problem in the proportion of the adults destroyed before the egg laying had taken place.

Of course, we shall go forward with our spraying program as evidenced by the need this spring. But I shall be more than delighted again to hear the call of the phoebes on their annual return. It is to be hoped that not only the parents of last season's hatchings, but more of the young as well will return. The tool shed is in readiness for their formal opening for the season of 1938.

Amateur Bird Studies as Educational Activities

R. A. JOHNSON, ONEONTA STATE NORMAL SCHOOL

The penguin in its antarctic home or the dovekie in the north Atlantic, what good are they? That is the question which the layman frequently asks when he is shown a picture of one of these birds. Perhaps we might ask the same question concerning any of our native songbirds, yet most people admit general belief in their esthetic value or even credit them with a certain proportion of good deeds of practical value. Any bird lover will be impatient to talk on this subject, but in the end, I suppose, each person must answer it for himself. Let me, then, suggest a few bird studies which serve as an end in themselves because of their practical value as educational devices. If as a result, the more remote values accrue, we should be happy for that, too.

Certain ornithological problems of great interest to the amateur are commonly available in most communities. Some of these are adaptable to group study. They are excellent teaching material for our boys and girls, and the best way to use them is to plan an activity program for study of the live bird which will give personal satisfaction to the individual pupil through his own creative efforts in pursuit of the study.

A restatement of some of the objectives for junior high school science will indicate the possible value of these bird studies and serve as a challenge to any teacher's imagination. They are as follows:

1 To increase the pupil's appreciation and awareness of the factors of his environment

2 To develop the pupil's powers of observation through a carefully directed study of common phenomena

3 To give the pupil training in the use of the scientific method

4 To foster in the pupil a confidence and belief in the knowledge he gains by use of the scientific method to the extent that it will influence his daily conduct through the formation of good habits

How does bird study offer anything toward the accomplishment of these objectives? The answer is that it offers ideal materials if the teacher can see them and applies the proper method to the study. Joseph Hickey, in the December 1938 number of Bird-Lore has discussed "The Amateur Ornithologist and His Bird Club." In this fine article are many suggestions for a teacher whose class might become a bird club. It is my purpose in this article to outline a few studies and in so doing, place emphasis upon the type of study which is accessible and the method to be used. In these it will be noted that the study is a real one. It is with the purpose of furthering educational training that I make these suggestions, although I believe that the teacher should strive with his pupils toward the accomplishment of creative work in ornithology. Therein lies the challenge to their interest, perhaps much of the value.

Suggested Studies

1 Study of the Nesting Success of a Population of Hole-nesting Birds

Procedure. Plan and construct 50 or 100 nesting boxes of a type attractive to bluebirds or tree swallows. Make these of such material that they will appear inconspicuous when placed for occupancy. Have the boxes ready to put out by the first of April or earlier if the weather is favorable. Make arrangements for cooperation with landowners on whose property the boxes are to be distributed. It may be that they could be distributed along a several-mile stretch of country road in positions where they would not invite the curiosity of the average traveler. They should not be disturbed except by members of the group in connection with the plans of the study. When the nesting season starts they may be examined once each week or more often after the young hatch, depending upon the nature of the data which are desirable to secure and the precautions necessary to protect the birds. Give each box a number and keep a complete history of what happens there during the breeding season. Special sheets should be made up for recording data on each breeding attempt for each pair of birds. If there is a second brood of young, records should be completed for them. Data should be recorded for the species of bird which uses the box, the kind of habitat in which the box is placed, dates and weather conditions for all recordings, number of eggs produced and what happens to them, number of young produced and what happens to them and any

other data which the group making the study finds interesting and pertinent to record. All this work should be a cooperative enterprise if maximum educational benefits are to be gained by the pupils. Meetings and discussions within the study group will be necessary and will enhance the value of the activity.

2 Determination of the Effect on the Feeding Range of a Nesting Pair of Starlings Which Collects Its Food Mostly from the Ground

Procedure. Locate the territory of a pair of starlings nesting in an old tree or building where the surrounding countryside offers an unobstructed view for some distance in all directions. Determine upon an observation post from which the parent birds may be seen going to and coming from the nest site. After a general idea of the feeding range has been observed plot this territory into quadrats, each containing about four square rods. Make plans for different members of the study group to occupy the observation post for several hours representing different times of the day and record observations to secure data representative of the feeding activities of the young birds at different ages. Number the quadrats to determine any choice of type of feeding territory. Make notes on the frequency and quantity of feeding. Note the daily feeding hours, which parent bird feeds the young and the effect of weather on feeding activities, also the effect of the growth of vegetation and the supply of the kinds of food available. In the end compile the data to evaluate the economic effect of the pair of nesting birds, qualitatively and quantitatively, and show the extent of land and to what extent affected.

3 A Study of the Variation and Character of the Robin Population over a Given Area during a Part or All of the Summer Season

Procedure. Determine an area to be studied — an entire village site or a certain part of the residential and park area of a city could be advantageously used for study and would be large enough to be representative of the locality. Let each cooperating pupil be responsible for recording data over a certain portion of the area at each recurrent survey. In case of need for trespass, landowner's permission should be secured. All cooperating pupils should be familiar with the aims and methods of the study, as determined before the field work begins. It would be interesting to start weekly surveys of the territory when the migration begins and continue throughout the breeding season. Data should be recorded on the total number of birds found on the territory at each survey, the number of each sex, the number of young and adults at each survey, the number of nests started and completed, and the distribution of nests. At the end of the study many interesting and significant summaries could be made. Some of these might be as follows: percentage of young reared; survival rate of breeders, nests and young; movements of adult and young into and out of the region; effect of weather on birds, and type of territory most desired by the birds during different times of the season.

Expected Results from Such Studies

Summarizing the data from such studies will bring information to throw light upon the nature of biological laws in a way to increase greatly a pupil's powers of observation and comprehension. First-hand participation in the use of the scientific method to study a problem will have been every pupil's experience. An appreciation of the many factors which affect the nesting success of a species such as the bluebird has educational significance when gained through personal experience by use of the scientific method. Some new, worth while and interesting information may have been added to the total of human knowledge — an accomplishment which both pupil and leader will prize.

References

The following references are listed for the help of any teacher or club leader who wishes to study a report of a study similiar to those suggested above.

Austin, O. L. jr, & Low, S. H. Notes on the Breeding of the Tree Swallow, (Bird-Banding, v. 2, no. 2, p. 39)

An interesting and significant study of a population of tree swallows nesting in boxes in the vicinity of Cape Cod.

Hickey, J. J. The Amateur Ornithologist and His Bird Club, (Bird-Lore, Nov.–Dec. 1937, p. 425–29)

This article has many ideas of first importance for the teacher or leader of a club.

Johnson, H. S. Notes on the Family Life of a Pair of American Pipits. (Wilson Bul., September 1933, p. 114–18)
Gives a record in some detail of the activities of one family of birds.

Musselman, T. E. Three Years of Eastern Bluebird Banding and Study. (Bird-Banding, v. 4, no. 4, 1935, p. 117–25); also (Bird-Lore, Jan.–Feb. 1934)
Describes a study of bluebirds by supplying appropriate nesting boxes.

Nice, M. M. Studies in the Life History of the Song Sparrow I. (Trans. Linn. Soc. N. Y., v. 4, 1937, p. 247. Amer. Mus. Nat. Hist., N. Y. City.)
This is the book needed as a guide and inspiration by any student of the live bird in its outdoor habitat.

Stoner, Dayton. How Fast Does a Barn Swallow Grow? (Univ. State of N. Y. Bul. to the Schools, 1936, p. 122–24)
An interesting type of study of a family of young birds.

Whittle, C. L. Study of Humming Bird Behavior during the Nesting Season. (Bird-Banding, Oct. 1937, p. 170–73)
An unusual study of an interesting bird.

Some 1937 Adirondack Observations

ORRA PARKER PHELPS, GANSEVOORT

Up in the Adirondacks is an open shelter away from any of the commonly used trails leading to the top of Mount Marcy; this shelter is near the trail from Marcy Dam to Mount Colden. It is not directly on this trail, but is tucked away deep in the woods on a bit of level ground near Lake Arnold.

At this shelter on the evening of June 19, 1937, were Doctor Phelps, Alton West, the ranger, and myself. Doctor Phelps and I had planned to stay the night there in order to have the advantage of an early start for the top of Colden the next morning.

Since darkness was coming on, we repaired the stone fireplace and prepared our meal. Then, after the manner of mountain lovers, we sat for a while by the fire with a word here, a silence there. Presently, all unannounced, a bird stranger joined our party. Out of the forest he came, looked at our empty board, decided that if he were to sup it would be by his own effort, then alighted on a near-by towering spruce. At first we paid scant attention — then Doctor Phelps said excitedly, "See! It has only three toes!"

That was enough to arouse our immediate interest and we all watched intently as this arctic three-toed woodpecker — for such it proved to be — steadily worked at getting his evening meal. After alighting on the spruce he shuffled around and around it, tapping ever with his stout beak, finding sometimes a juicy morsel which he paused to devour, then — around and around, up and down, he would go. Presently he flitted to another spruce, explored it, then returned to the one on which he first alighted. Although many other spruces grew in the vicinity, he worked for a time only on these two, then in the gathering dusk flew away. During the half-hour that we watched we had ample time to note the characteristic markings, including the three toes, held two in front and one behind, the plain shining black upper plumage, the barred sides and the orange crown-patch.

Another bird that we saw and heard on this trip was the Hudsonian chickadee. But the most thrilling bird spectacle that I witnessed during my three months' sojourn in the mountains was the swallow migration near Lake Placid in August. The birds seemed to number tens of thousands. Sometimes a 40-wire telephone line would be heavily laden with them as far as one could see; for rods roadside wire fences were crowded with birds, the tree tops were black with them while in the air uncounted myriads darted and whirled. We had no field glasses but we could make out barn, bank, rough-winged and tree swallows. It was a rare sight, one never to be forgotten.

The University of the State of New York
Bulletin to the Schools

Issued semimonthly during the school year by the State Education Department

CHARLES F. PROBES, *Editor*

This bulletin is sent without charge to all schools and educational institutions of the State. To others it will be mailed postpaid for 50 cents a year, 5 cents for single copies.
Entered as second-class matter September 30, 1914, at the post office at Albany, N. Y., under the act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in section 1103, act of October 3, 1917, authorized July 19, 1918.

MARCH 15, 1938

Thoughts about Bird Day

ROBERT CUSHMAN MURPHY, PRESIDENT, NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

New York and at least 30 other states have celebrated Bird Day in the schools annually for many years. Thirty years or more of this activity in more than 30 states represents tremendous advances in the cause of bird protection. Adding the nearly six million Junior Audubon Club members, enrolled in the last quarter of a century, the Boy Scouts of America, the Girl Scouts, the Camp Fire Girls and now the 4-H Clubs, all of them indorsing bird study and conservation as an integral part of their programs, it is little wonder that the popular attitude toward our feathered wild life has changed so markedly since the beginning of the century. Although in some parts of our country much pioneer work remains to be done, the point of view of most young people in this section is remarkably good. Few of them deliberately destroy protected species, and the small boy's egg collection is a thing of the past.

It can truthfully be said that very few of our songbirds are willfully persecuted today. Their position in that respect is sound, but we are beginning to be aware of another much greater problem — that of preserving the environment. In spite of all the protection we can give them, birds will not hold their own if they have no place to live. They are dependent upon the ability of the environment to support them. Someone has remarked that "a habitat is like a house — if the family that lives there dies, another family can move in; if the house burns down, or is destroyed, no family can live there." How true this is! When a marsh is ditched and drained, the rails, gallinules, ducks, bitterns and marsh wrens that live there are eliminated just as completely as if they had been shot or poisoned — a little more subtly perhaps, but just as surely.

Marshes and swamps with their high bird populations are being destroyed wholesale. We recognize the need of the control of mosquitoes around large communities and the reclamation of certain lands for farm use, but, using these as excuses to spend money, a wave of unnecessary drainage projects has been sweeping the country. Instead of using other more effective means of controlling mosquitoes, marshes have been ditched, the water table lowered, the plant life altered and wild life has died off.

Although currently our marsh birds are probably losing out far more than most of the others through loss of habitat, there are other problems. Pollution of lakes and streams by sewage and chemicals renders the water sterile of plant life, fish life and, indirectly, bird life. Then too, there is "slick" farming, where the plough hugs the fence, leaving no hedgerows or corners for the birds. There are many such things, most of them avoidable. Naturally we can not object to the advances of civilization, but these advances need not mean the disappearance of the creatures that share this earthly planet with us. When the hand of man changes the face of nature, the bird life is often altered too, but if the change has been well-managed, wild life can even benefit. A fine example is the Jones Beach State Park, where in spite of the hundreds of thousands of human visitors, bird life has actually increased since its development a few years ago.

Let us give these things a thought on Bird Day!

—o—

Acknowledgment

Friday, April 8th, has been designated as Bird Day for the schools of the State.

This Bird Day issue of the Bulletin to the Schools was compiled with the cooperation of the New York State Museum. The editor desires to express his appreciation to Dr Charles C. Adams, Director of the Museum; to Dr Dayton Stoner, State Zoologist of the State Museum; and to the contributors of the articles.

Rex Brasher, Bird Artist

LILLIAN C. STONER, ALBANY

The colored illustration of eastern purple finch which appears on the cover of this number of the Bulletin to the Schools has been reproduced from the work of Rex Brasher. This artist has spent nearly a lifetime in painting most of the species of birds known to occur in North America.

For many years Mr Brasher traveled through various parts of the country to view his subjects at first-hand in the field. Most of his early paintings he subsequently destroyed for he felt that he could improve their quality. Finally, in 1928, Mr Brasher completed the 874 colored plates which now comprise his "Birds and Trees of North America."

In order to make practicable the publication of this ornithological work of art it was decided to prepare an edition of 100 twelve-volume sets. Each original plate was reproduced by first photographing it; the colors were painted in later. Mr Brasher personally colored all the figures in the 90,000 copies but he obtained assistance in reproducing the backgrounds. There are 3300 figures, many of them life-size, illustrating the more than 1200 species and subspecies of birds native to this country. For those forms in which the sexes differ in coloration, both the male and female are depicted; in numerous instances figures of the young accompany those of the adults. Native shrubs and trees in blossom or fruit also are illustrated on many of the plates.

Last fall Doctor Stoner and I called on Mr Brasher at his home in Chickadee valley, one-half mile west of the New York-Connecticut state line and about two miles northwest of Kent, Conn., from which village Mr Brasher receives his mail.

In February 1938, the original paintings were exhibited for one week in Explorers' Hall at the National Geographic Society's Building in Washington, D. C. At this time also, Paramount Pictures, Inc., made a news-reel film of the exhibit for release to the public.

Great credit is due Rex Brasher for conceiving and carrying to completion this illustrated contribution to North American ornithology.

The European Starling's Relation to Native Species

J. T. NICHOLS, AMERICAN MUSEUM OF NATURAL HISTORY

The writer has had the interesting experience of witnessing the initial appearance of this European bird on Long Island, watching its spread and increase in numbers to present abundance. Has it occupied some place previously unoccupied by native species, or has it pushed aside native birds to make room for itself? As a matter of fact it has done both. Nature abhors a vacuum, and under natural conditions one would expect to find no niche in the out-of-doors that was not at least partially occupied by one bird or another, but conditions on Long Island since the advent of the starling have been far from natural. Suburban development, becoming more dense at the west end of the island and pushing eastward, has displaced many birds, and left an opening of which this foreigner has taken advantage. It finds in the suburbs an ideal dwelling place, cleverly adapts itself to the ways of man and eludes their risks, while its great powers of flight and wide ranging habit enable it to forage in the open country when its suburban home does not furnish sufficient feeding ground.

The starling is an adaptable bird, and the niche occupied by it a very wide one, that is, it utilizes a great variety of possibilities for obtaining a living. Hence it is no simple matter to say with which species it does and with which it does not compete. Its habits are rather comparable with those of the common crow, and perhaps it would have found in the crow a serious competitor but for the difference of size between these two. That it does not compete with the robin is verified by the undiminished numbers of that bird where the starling has become most abundant. Its increase has presumably not been a factor in the decrease of the house sparrow, that being correlated with the advent of the automobile.

When but a few starlings were present at the western end of Long Island, not enough to form flocks of their own, they were observed

to associate with the meadow lark, and out of town they probably feed in the meadow lark's territory as much as in that of any other species. Now their flocks associate more with those of grackle and cowbird. The meadow lark has decreased markedly on Long Island, and the grackle somewhat since the advent of the starling. It is with other hole-nesting birds that starling competition is most obvious, assuming the aspect of aggressive personal warfare. Starlings could scarcely fail to interfere with such a species as the bluebird, but the bluebird bred very scantily on the island prior to the starling's coming, and can hardly be said to have decreased. They interfere very decidedly with the flicker, but the flicker can always dig another hole, has time enough to raise a brood after the starling is through nesting, and where conditions are sufficiently favorable for it, remains in goodly numbers in spite of the abundance of starlings. As a berry eater in fall the starling doubtless deprives many native birds of an important food item at times, birds of species otherwise not likely to compete with it. A flock of starlings from somewhere else will settle on a berry-bearing tree and denude it of fruit which might have lasted a hermit thrush living near-by all winter. Where the starling is sufficiently numerous it probably exerts a psychological pressure on other species; they avoid its noisy crowds, go elsewhere, surrender territory to it. Whether this actually occurs without some more tangible form of competition, would be difficult to say in the starling's case, for it is so adaptable that its habits might touch those of many birds.

One of the starling's salient characters is its association in flocks, another is its mobility, another is its tendency to concentrate coastwise after the nesting season. It feeds in the salt marsh, as it does in open fields, also along the drift line on the outer ocean beach. In well-built suburban sections there are plenty of starlings any day in the year. Although of a bitterly cold winter day one may not see any, they are probably there somewhere under cover. Birds of the year move off into open country and form the first summer flocks. Somewhat later birds over a considerable area concentrate at roosting points. It would be interesting to know to what extent they range in and out of town. One or two pairs breeding about isolated buildings in the country usually disappear after the nesting season for a considerable period. It may be that they have joined wandering flocks in open country, but it is also possible that they have moved to town.

Whether we like to have it with us or not, the European starling is here and is a very interesting species. Its complex habits or adaptations to our environment are as different from those of any American species as is the bird itself. A considerable part of our starling population is no doubt migratory, moving back and forth between summer and winter quarters hundreds of miles apart, and a considerable part probably resident within a comparatively few miles of the nesting grounds.

In late fall this species may be seen in large flocks. These do not involve the entire population as scattered birds occur at the same time, mostly about villages, where they are sometimes only less common than in summer. Large tracts where they are common in summer are in the fall, however, without them. It is not unusual to cover a score of miles or more by road on Long Island and not see one. This unoccupied territory will have been repopulated by spring; and the birds about the villages act as though they were reestablishing themselves for the following breeding season. The hypothesis that the individuals normally all go through a flocking period which varies sufficiently as to date to leave always an overlap of nonflocking birds, is as good as that some go through such a period and others do not. In any event a large proportion of individuals moves seasonally to and from breeding stations. It would be interesting to know also the relative proportions of local and migrant birds comprising late fall flocks and the possible correlation of this movement with migration.

The old proverb "Birds of a feather flock together" has unusually wide application in the case of blackbirds, which frequently occur in mixed flocks comprising more than one species. One may suspect that their common black color is correlated with sufficiently similar habits when in flocks to cause them to mix readily. And the black-feathered starling frequently occurs in mixed flocks with cowbirds or grackles. One sees it flying to roost in their company often enough, and it has been suggested that it has become migratory by association with migrating flocks of grackles. Something of the sort may be a factor though certainly not the only factor in building the starling's migration pattern in its new home in America.

Nesting of the Great Horned Owl

VERDI BURTCH, BRANCHPORT

Photographs by the author

With every man's hand plus guns and pole traps against the great horned owl this bird seems to hold its numbers quite successfully. Although one of our largest species, its noiseless flight, retiring habits in daylight and, I believe, early nesting habits contribute largely to its success.

An Adult Great Horned Owl

Nesting in late February or early March, the bird's hootings are heard more often at this time, but will also be noted from early November all through the winter. Down below my house, in the big hickory and on the peak of my neighbor's barn, I sometimes see the bird outlined in the moonlight, and hear his "Ho, ho-ho-ho, hoo" and then from across the valley comes the answer of his mate, "Who, who-who, whoo, whoo."

The "Cliff Nest" of the Great Horned Owl

Year after year we find a nest of this owl in a niche or on a shelf in a cliff in the "Big Gully." There it is safe from the foxes and from man. One year we photographed a nest and three eggs there. It was on a shelf about ten feet below the top of the cliff. The owls left the nest and vicinity and did not show themselves while we were at the nest. Quite different was another pair that I found a few years before nesting in a large pine in the middle of a tamarack swamp. Under the tree in the water was a downy young owl, dead. When I reached the nest I found two young, one much larger than the other. The one on the ground was larger than either of the others and was probably the oldest of the brood. Owls lay their eggs at intervals of several days, so there may be a difference of a week in the ages of the oldest and the youngest of a brood of three. This nest was above the tops of the surrounding tamaracks and it was fun to watch the old birds fly from tip top to tip top of the tamaracks and there balance and scold me, saying "Wock, wock, wock."

Several years ago I was fiercely attacked by a great horned owl. I was looking for nests

of the red-shouldered hawk, and in a small thin woodland, where I least expected to find an owl, was an old dilapidated crow's nest in a small oak tree. Seeing something white in the nest, I climbed the tree. I had seen nothing of an owl or other bird, but when well up toward the nest, without any warning I was struck a sharp blow on the forearm by an owl. Had I not had a firm hold of a limb I would have been knocked from the tree. As it was, the blow drew blood in six places where the claws went into my arm, and this through a heavy coat. I had to dodge her attacks again and again until I broke off a dead branch and held it out as she charged. She struck it and went tumbling toward the ground, but recovered and managed to fly up to a limb on a near-by tree. She sat there for a few minutes, saying "Wock, wock, wock," then left the woods and did not come back while I was there. There was only one young in the nest, a downy white nestling about two weeks old. It had been well provided with food, as in the nest were parts of three crows, the hind parts of a cottontail rabbit and of a rat. Owls always eat beginning on the heads of their game.

Another owl was using an old crow's nest in a big pine, one of a group of pines in the creek bottom. The ground under the nest was strewn with feathers of ring-necked pheasants and crows and there was a young cottontail rabbit and the legs of other rabbits. In the nest were two owlets about three weeks old who had just been dining on pheasant and crow. A few days later the remains of a Virginia rail lay in the nest.

Nearly every year we find a great horned owl's nest in the south end of "Potter Swamp," sometimes as early as February 25th. This year the winter has been so mild that we went over the 21st, expecting to find the birds around their old nesting place. For the past two years they had been using a hole in an old dead elm tree, but we found the tree broken off and lying on the ground in ruins, the hole upward and clearly recognizable. So a search was in order. This pair always used a hole in a tree when a suitable one could be found but we once found them using an old nest of the red-shouldered hawk. Now, however, we could find no tree with a suitable hole; neither were there any old crows' or hawks' nests. Downy

The "Hollow Tree Nest" of the Great Horned Owl

and hairy woodpeckers were flitting about and drumming on the dead trees, many of which had loose bark and seemed just the right place for the brown creepers to nest. We did find the remains of one of their nests.

What interested us most was the work of the pileated woodpecker on the dead trees. Many of them were pecked full of deep holes where these large woodpeckers had sought grubs or larvae of various species of beetles. Chips found on the ice were much larger than those pecked out by our smaller woodpeckers and showed that much of the work was recent. In the top of an old stub were three large nest holes where these birds had nested three years in succession. My companion saw one of the big woodpeckers flying through the woods. He called to me, but it had passed from sight before I could turn around.

A bunch high up on the side of a tree drew our attention and while we were looking at it, it began to move downward very slowly. It was a raccoon and my glass showed it to be in poor condition, the fur worn and faded. It had not seen us, and continued moving down. We tried to head it off, but when we reached the tree found that it had gone into another

hole that was on the opposite side. There had been tragedy in the coon family. Farther on we found pieces of honeycomb on the ice, and high above in a tree was a small hole. The bees had filled the hollow tree with honey. Then the coons found it and there was a well-defined trail up the tree and around the hole the bark was worn away where they had been satisfying their appetites for honey. One night not long before a coon was at the hole sampling the honey when old Bubo, hungry and hunting his dinner, came along, spied the coon and on noiseless wings sailed in and struck. In surprise and pain, the coon loosened his hold and both coon and owl dropped to the ice below. There was a terrific struggle and the owl won, for lying on a near-by log was the coon's skin turned inside out; and this with the skull and leg bones was all that was left of the animal.

Perhaps the owls had a new nest in the deep woods, but we had no time for a more extensive search.

Bird Bread Lines in Northern New York

RUTH F. WILLARD, RADIO STATION WCAD, CANTON

The Radio Workshop of St Lawrence University inaugurated in December 1937 a series of radio programs called "Our Birds." The program is broadcast each Saturday at noon over the university station, WCAD, and is designed to promote a greater interest in our northern New York birds and particularly in feeding them during the long winters of this north country.

On our first program we explained how to build feeding stations and what food to put out to attract different kinds of birds. In order to encourage people to write to us about their experiences and problems with feeding birds we ran a contest and gave the three following prizes: first, Audubon's Birds of America, second, Chester Reed's Field Guide to Birds, and third, Mabel Wright's Birdcraft. Also, for each letter we received we sent three of the Audubon bird cards.

Immediately after our first broadcast we observed many new feeding stations go up and we began to receive letters and snapshots. One nine-year-old boy wrote, "An evil hath descended upon my feeding station. I made it with elastic bands, the way you told me, so it would jiggle and the sparrows wouldn't come, but now the starlings come in droves and chase all the other birds away. So what shall I do about it?" So Bernauer Newton, or "Fig Newton," as his fellow students call him, and as he has become known on the air, answers their questions, tells them how to keep bird calendars and identify different birds, and gives short biographical sketches of famous bird lovers such as Forbush and Audubon.

Our listeners have reported seeing in this vicinity this winter the black-capped chickadee, white-breasted nuthatch, English sparrow, blue jay, starling, slate-colored junco, downy woodpecker, hairy woodpecker, purple finch, redpoll, tree sparrow, goldfinch, snowflake, pine grosbeak and Hungarian pheasant.

The chickadees are the most common and seemingly the most beloved by our listeners. Some have reported that they feed from their hands. One wrote of seeing chickadees alight on the sandwiches of some workmen eating lunch near-by. Another said that for a while she was worried for fear the nuthatches at her feeding station were eating all the food and the chickadees were not getting their share, but when she saw a chickadee go to a tree and eat a piece of suet which a nuthatch had hidden under a piece of bark, she ceased worrying.

On the other hand, the blue jay seems to be a fellow whose morals are under censorship and whose presence is discouraged at most of the lunch counters. One of our listeners, however, plans the proffered repast to tempt the appetite of the blue jay particularly, because she much admires his gorgeous coloring. She says there are often nine in and around the box at one time.

Another of our unseen audience had a lone robin which came and fed on bittersweet berries put out with some evergreen branches. It stayed until January and then disappeared.

We are now starting a new contest, its object being to stimulate birdhouse building. Each week brings letters from new listeners of all ages and we hope to make of this snow-clad region a winter resort for the husky ones.

A Christmas Bird Census

DOUGLAS AYRES JR, GENERAL SCIENCE INSTRUCTOR, CANAJOHARIE HIGH SCHOOL

For 38 years Bird-Lore, official publication of the National Association of Audubon Societies, has conducted an annual Christmas bird census.

A bird census reveals the status of the permanent winter residents as well as the winter visitants of a locality. Then, too, the census may reveal straggling or belated individuals of species which generally migrate southward.

The bird census observer must be active and alert. He must be tireless and painstaking. Every bird note, whether it be strange or familiar, must be investigated. Every woodland, ravine and fence row must be thoroughly combed for bird life.

Such a census is valuable in so far as it becomes scientifically comparable with other censuses taken in the same manner at the same time. Thus the greater the number of correctly tabulated censuses, following the stipulated regulations, the easier it becomes to draw conclusions and generalizations and to state authoritative ornithological facts about the bird life of the whole United States and Canada at the Christmas season.

Bird censuses are valuable not alone for the comprehensive data which they provide, but also for the cumulative records of a given region, and local comparisons from year to year. And last, but not least, they furnish splendid recreation, healthful, vigorous exercise and unforgettable thrills. The thrill may be in the form of a long-sought species observed for the first time, or a well-known species never before recorded in that particular locality at that time of year.

It is my belief that more students of biology in the high schools throughout our State should avail themselves of this opportunity to study birds afield. There is the satisfaction to be gained from having a carefully prepared census published in Bird-Lore. The census could also be used as a science club report, or as an outdoor project for the biology club. Science teachers themselves might profitably engage in this activity, and through their own participation encourage their pupils to prepare accurate and comprehensive surveys. Such an activity not only stimulates the pupils' curiosity and interest in natural science but also may establish a genuine desire to assist in bird protection and wild life conservation. And I am sure that no one who has ever paused in the winter woods to watch the chickadees or nuthatches can fail to have a real and abiding love for our wild birds.

On December 26, 1937, I started out at dawn and as the eastern sky flamed with the rising sun I followed the Mohawk river in quest of birds. My weapons were binoculars, notebook and pencil. My success was measured not as the hunter who counts his bag, but as the naturalist who neither molests nor destroys; he watches and learns and stores a treasure of memories of bright plumage, of captivating ways and sweet notes of his feathered friends, to be re-created and relived in days and years to come.

The English sparrows and starlings were the first birds to greet the new day as I went up the village street. I was in a hurry to reach a certain river marsh before the birds which roosted there should have scattered to various feeding grounds. And I was especially anxious to see the three red-winged blackbirds wintering on Abeel Island game refuge. My calculations as to time were rightly gauged and I saw the red-wings just as they were about to leave the shelter of the cat-tails. Then I was concerned about establishing the identity of a sparrow I had heard calling at sundown on the 25th. This morning it called, as sparrows often do on winter mornings when they are awakening. Its call was answered. The bird flew past me, then alighted. As I drew near I noted its plain gray breast, a decided buffy wash on the flanks, lack of wing bars, and the presence of a light median line through the crown. This was my first acquaintance with a swamp sparrow in winter plumage and my first local winter record for the species.

The sweetly plaintive note of a goldfinch sounded on the frosty air. A startled cock pheasant broke cover on noisy pinions. In the near-by river, where condensed vapor curled from the open water like smoke plumes, five American mergansers paddled frantically and taxied to a take-off up the wind. Herring gulls wheeled and dipped as gracefully as in summer, and I pondered whether there was any foundation for the statement, "It is sure to storm

when the gulls fly up and down the river in winter." At any rate large, fluffy, cottony flakes of snow soon began lazily drifting earthward.

The wilderness harmony of several crows cawing in the distance reached my ears. The object of their conversation, a hawk, sitting supremely remote and aloof on an elm, was too far away to be identified. Stalking proved futile on account of crackling ice which I had to traverse along the river.

A flicker flew by in unmistakable undulations. Tree sparrows, although in small numbers, were feeding upon roadside weed seeds. The boarders at my suet stations, chickadees, white-breasted nuthatches and downy woodpeckers, swelled my list. But the thrill of the day was to come at noon.

The skies had cleared and had become intensely blue. A stiff northwest wind arose. The sun shone brightly on the sparkling snow. I was now four miles from the Mohawk river on a secondary tributary, the Otstungo. Out of the west, on powerful wing beats came an adult bald eagle, his snowy head and tail, golden beak and prominent eye clearly visible. Soon he had vanished, with only the calls of the crows to mark his passage.

I cooked dinner on the site of the prehistoric Mohawk village of Otstungo. My fuel was pine from a primeval stump. Friendly chickadees and a hairy woodpecker, some white-breasted nuthatches and downy woodpeckers came to keep me company and to collect a few crumbs.

Now a nasal note, more rapidly repeated than that of the white-breasted nuthatch, betrayed the presence of the red-breasted nuthatch. Although I saw but two examples I have observed this species in every woodland all this fall and winter; some years have passed during which I have seen only one or two the whole season. I have taken Christmas bird censuses for 19 years and only once before, in 1926, did I see a red-breasted nuthatch.

The clipped wings of hemlock seeds came sifting down from the upper boughs of a hemlock woods where a large flock of pine siskins were feeding amid an incessant exchange of call notes.

The incisive notes of brown creepers cut the frigid air. Three slate-colored juncos fluttered up from a wind-swept knoll.

Chickadees scolded angrily as a great horned owl arose from a tall hemlock tree. From the slopes of a steep ravine two ruffed grouse hurtled away with explosive suddenness.

I feared what the severe days to come might have in store for the lone robin, silent and somewhat crestfallen, skulking through the underbrush. He would be unable to cope with winter gales as blithely as the merry chickadees, prying off bark and investigating every tiny crevice for insect food, and pausing every now and then to voice their cheery "Chick-a-dee-dee" and "Phe-be."

As the sun plunged behind the Cherry Valley hills and the Adirondacks purpled in the dusk, the hollow, booming, hunting cry of the great horned owl floated out across the wind-swept fields and concluded my day with the birds. A final tally of 24 species and 197 individuals was the reward of my effort.

"Cock of the Woods"

HAROLD H. AXTELL, CORTLAND

This winter I had the unusual experience of living for two and a half weeks with a pileated woodpecker, a female that was given to me by a friend, after the bird was found in an orchard, apparently too sick and weak to take care of itself. Glad I was for the opportunity to nurse it back to health, as the noble pileated woodpecker is a decidedly uncommon bird in most parts of New York State, largely because ignorant and selfish hunters kill it "just to find out what it is" or "just to see if they can hit it." Since only the most wary of the pileateds are so fortunate as to escape these gunners (it is illegal to kill woodpeckers at any time), those of us who are interested in the living bird find it well-nigh impossible to know it intimately.

Those who have watched birds know that each species has a personality of its own. Here, I realized, was my chance to learn something of the personality and traits of a pileated woodpecker.

The first two days the bird was too weak to care about anything but sleeping and resisting our efforts to make her take food. Since she squirmed and struggled so desperately every time we pried open her bill and placed food down her throat with a pair of tweezers, I was hoping we might soon be able to terminate this method of feeding that was so distasteful to her.

On the third morning, however, when food was held before her, she deliberately swept it onto the floor with her long bill. After several repetitions of this, I finally gave up, dipped the tweezers into the food and grasped the bird firmly by the back in preparation for the ensuing battle over the hated forceful feeding. As we reached for her bill, she suddenly gave a quick lunge forward, struggling frantically until she reached the tweezers, when to our complete astonishment she voraciously gobbled down the food!

For the rest of that day it was necessary only to threaten her in this way, and she would immediately make desperate efforts to swallow all the food within reach as quickly as possible, lest someone might try to force it down her. By the following day she had learned to help herself to food as it was needed from a supply kept constantly near.

During the next few days our bird's strength returned so rapidly that she soon decided she wanted her freedom. Accordingly, in a very few minutes, with the aid of her powerful bill she would chop her way out of any cage, box or crate in which we placed her, always announcing her escape by her defiant "laugh."

This "laugh," or flickerlike call which one hears with such frequency from normal wild pileateds, particularly interested me because with the captive individual it was invariably associated with some newly gained freedom. The only times she gave this call were immediately after escape or release from a cage or crate, and each time that she was taken out of doors and allowed to fly to a tree trunk. Can it be that every time this sound drifts to our ears from the haunts of the pileated, the great woodpecker is actually shouting joy at being alive and free? Believing this to be so, I shall listen henceforth to this "call of freedom" with infinitely increased pleasure and appreciation.

The possibility that our bird may have been calling to her mate was weakened by the fact that she paid absolutely no attention to a

Photograph by K. T. Axtell

The Pileated Woodpecker — Dynamic, Independent, Proud — Even in Captivity

mounted male specimen placed near her, ignored her own reflection in a mirror after the first glance, and was not interested when Albert R. Brand of Cornell University played one of his excellent pileated woodpecker sound recordings for her.

Hammering with her bill was often employed as a specific outlet for any form of emotionally generated energy. We sometimes played a sort of game in which I made passes or feints at her, she striking at my hand with her bill, and I trying to jerk my hand quickly away from the flesh-penetrating blow. If during this play, she was able to get in a goodly proportion of telling blows, she would perch there, when we had finished, eyeing me with a savage air of calm and self-satisfied superiority. When, however, the hand was consistently quicker than her thrust, thus making her bill appear as an ineffective weapon — well, that was just too much for her pride. She would then begin whacking angrily at anything else that was near, wreaking her wrath and vengeance on it. The pileated woodpecker is highly dependent on the effectiveness of its bill for food-getting, defense, and much of its general self-expression. I believe the bird's personality would be quite different, were it not for the sense of confidence and power gained through this bill.

Several times a day, apparently becoming dissatisfied with the life of ease and inactivity, our captive would start pounding forcefully on anything convenient, seemingly "just for the fun of it." She often made as much noise as a carpenter at work, so at these times she was taken out-of-doors and permitted to use her surplus energy in flight and in chipping off bark in search of insects and their larvae.

This woodpecker seemed to have an inherent terror for the loud rustling of paper. Possibly it may have been an instinct to flee from the crackling sound of a forest fire that made her nearly always go into a panic at this somewhat similar noise. It was highly amusing, therefore, to watch her one day while she spent over an hour cutting and tearing a large newspaper into small bits with the greatest of flourish, in the true Don Quixote manner. During the occasional brief moments of rest she presented a terrifying picture of avian anger; her neck stretched to the utmost, poised for the next blow, the scarlet feathers of the crest standing sharply on end, the eyes opened wide and blinking rapidly in nervous excitement, the bill held threateningly open. One could see that the newspaper just didn't have a chance.

She acted as if she had just discovered that this sound which always had frightened her so badly was really only a hoax, caused by something over which she had superior power after all, and which she was now out to destroy completely.

The pileated woodpecker — dynamic, independent, proud, sufficiently intelligent to be adaptable when necessary, a bird whose life and personality seem to be built around its great love of freedom — may it ever grace the forests of New York State with its wild charm.

A Bird Feeding Station in the Dormitory Windows

MAE H. BAKER, DEPARTMENT OF SPEECH, KEUKA COLLEGE

Photographs by the author

The first thing that attracted me to Keuka College was the bird life in that locality. I was soon to discover that it was in a definite migration belt and that interesting field observations were insured. Included in my list this year are the whistling swan, blue goose and Nelson's sparrow, all found within three miles of the college.

The idea passed on to me by bird friends of using a coconut shell for a bird feeding station in winter appealed to me because the starlings and English sparrows would be distinctly out of the running with a swinging station; and so the preparation went forward.

Since there are two large windows in my corner room, a broomstick cut in half served

Black-capped Chickadee at Coconut Shell Feeding Station

nicely for both and a wire soap shaker filled with suet was soon swinging from one of the sticks fastened half way up the side of the window and parallel with the ground. After the meat had been removed, the coconut shell was fastened to the other half of the stick by a stout wire.

The cut made through the middle as shown in the picture, gave ample room for a chickadee to sit on the lip of the opening. Suet with ground corn and seed also were placed in the coconut shell and a large piece of suet was folded in a fragment of wire netting and tied to the perch so that it would swing.

This preparation was completed January 23, 1937. I waited days for birds — any birds. It was not until February 20th that the suet was touched and the coconut shell was persistently disdained until I sprinkled it with peanuts; then the chickadees and the nuthatches threatened to bankrupt me. Without their peanuts the nuthatches sit and peer into my room from the broomstick. But it is the beguiling notes of the chickadees that bring the peanuts, salted, with or without shells, broken or whole. They peck and carry away industriously until the coconut shell is empty. Often there is a nuthatch on the suet, another on the lip of the container and a soft-voiced chickadee timidly pleading from the perch to be given a chance while a downy woodpecker sways upside down on the soap shaker at the other window.

I do not care to tame these birds. They take such infinite delight in secretly making off with a prodigious amount of food; and, too, wild birds please me more than tame ones. I feel quite removed from college cares and transported to the edge of the woods somewhere when I quietly enter my room to find the wild birds feeding in their own way just outside the window.

The Soap Shaker Loaded with Suet for Hungry Bird Visitors

Housing Problems of Bluebirds

RALPH C. PRESTON, BRONXVILLE PUBLIC SCHOOLS

There is a housing shortage in the bird world. Paradoxically, there is at the same time an overabundance of the wrong kind of house. For example, there are half a dozen purple martin houses (large houses each with many compartments for these social swallows) at Manursing Island, Rye, N. Y., yet only one is actually used. The others serve merely a dubious decorative purpose and perhaps will never be utilized. One sees many martin houses throughout the beautiful country districts of Dutchess county which were erected years ago, yet only two breeding colonies of martins are known to bird students in this vast area, and these are in the most urban settlement of the county — Poughkeepsie! Yet despite this relative scarcity of martins in some parts of New York State and the abundance of martin houses, more houses are still being created and erected for this bird.

The house wren is also overindulged. If any birds seems easily satisfied with inadequate nesting sites, it is this imaginative, curious little wren. At Croton on Hudson I saw a pair successfully nesting in a box of nails in a school shop. What nook, corner or cavity has not been authentically reported as a nesting spot for the wren? Yet elaborate birdhouses, carefully measured for this bird, are so frequently in evidence that one would suppose the wren were in danger of an extinction from which humans were trying to save it.

There is one bird, however, that we are told is far less common than formerly, and which has real difficulties in finding suitable locations for nesting. This is the bluebird. This bird, too, has been found nesting in peculiar places, but it is much fussier than the wren. It prefers a cavity about eight inches deep and a hole one and three-quarters of an inch in diameter. Although there are plenty of natural cavities meeting these specifications fairly well, unfortunately they are being snatched with ever-increasing greed and pugnacity by the rapidly multiplying starling and the abundant English sparrow.

Last summer I noted an instance illustrating how hard pressed the bluebird frequently is for a home. Near little Round lake in the Adirondack mountains are a number of small cottages. One time these buildings had awnings attached, and though awnings are no longer used, the blocks of wood nailed under the eaves to which the awnings were fastened, still remained. These blocks caught the eyes of migrating cliff swallows which recognized them as excellent shelves on which to build their nests. They have been building them there for several years.

But to get back to last summer — one day I saw two bluebirds on the roof of one of the cottages. This being early in July, I imagined the pair must be nesting near-by. Presently I noticed that nesting material was being carried and that the bird carrying it would first alight on the roof, then duck under the eaves into one of the swallow nests. Investigation proved that for some reason this particular nest was not being used by any swallow. Later in the season and on this same cottage I found another nest that had been abandoned — the skeletons of two nestlings telling the story. It is not always easy to find why nesting in such cases has been started and not consummated.

The bluebirds finally constructed one of their own nests within the flask-shaped swallow nest over the thin layer of grass deposited by the previous occupants. This was not easily done. Cliff swallows from adjoining nests attacked the bluebirds again and again, often forcing them to flee with the nesting material. The attacks continued, though with diminished ferocity and frequency, well into the incubation period. The bluebirds were never molested, however, once they entered the nest. Three eggs were laid and hatched on July 23d. About this time the cliff swallows using the same side of the building had finished nesting and were no longer in evidence. I banded the female and the young bluebirds in the hope of learning whether this resort to a swallow's nest might become a seasonal habit.

Later I searched acres of surrounding open country for likely bluebird nesting sites in trees and posts, and practically nothing was to be found (though of course a human eye is in no way comparable to a bird's in such a search). Yet otherwise the locality was most favorable bluebird country, and no doubt houses especially constructed for their use would be readily occupied.

Winter Ducks and Other Birds of the Finger Lakes Region

GLEN P. VAN ESELTINE, GENEVA

Winter and early spring seem to many persons most untimely seasons for birding or bird-walking as the English call this increasingly popular hobby. The Finger Lakes, however, always have something of interest for the bird student. The larger lakes, Seneca and Cayuga, rarely freeze over entirely, and when they do, once in twenty or thirty years, only a skim of ice covers the deeper areas and that disappears in a few days. Generally there are open spaces in all the lakes and often only a rim of ice around the shores. All lakes contain fairly large amounts of food for water birds and here they come for the winter in considerable flocks which are augmented by others in early spring.

About 1914 the redhead duck began to come to Seneca lake in large numbers and in the early 1920's and again in the earlier 1930's rafts of 10,000 to 15,000 birds were not infrequent. Unfortunately this is one of the species whose future is in danger, and during the past winter 3000 birds, constituting, it is estimated, about half of all the redheads in America, were all that could be seen. Other sea ducks or diving ducks such as golden-eyes (or whistlers), greater and lesser scaups (or bluebills) canvas-backs, buffleheads and old squaws, together with both American and red-breasted mergansers are almost always to be seen. The few buffleheads and the old squaws stay well out in the deeper waters but one can count on finding them if one looks long enough. The red-breasted mergansers are rather uncommon in winter but large flocks are to be found in spring. Occasionally a few hooded mergansers are seen in winter but they, with the red-breasted form, the ring-necked duck, the ruddy duck, the white-winged scoter and the marsh ducks, among them the black, mallard, shoveller, pintail, baldpate, wood duck, blue-winged teal, green-winged teal and an occasional gadwall or European widgeon, are to be seen in late March and April. Flocks of black ducks, both red-legged and common, have of late years stayed through the winter with a few mallards accompanying them.

Canada geese come to the hillsides east of Cayuga lake in thousands each spring, and not infrequently a snow goose or two, a white-fronted goose or a blue goose and rarely a brant may be seen with them.

Not a year has passed in the past ten when one or more flocks of whistling swans have failed to appear. Three individuals wintered this past season on Keuka lake.

In addition to the ducks and their allies several other water birds are likely to attract the observer's attention. The little horned grebe is always with us in winter. The large Holboell's grebe and the pied-billed grebe are sometimes found in winter and always in the spring, as is the common loon. The red-throated loon is never common here but a few are seen each April. Coots are not infrequently seen in flocks of 100 or more. Herring gulls are abundant, and black-backed gulls are becoming more common. In spring the ring-billed and Bonaparte's gulls as well as the common, Caspian and black terns may be seen.

These are the regular lake visitants but there is always the chance of seeing a rarer bird — a surf scoter, a phalarope or others. Last spring eared grebes appeared on at least two of the lakes — the first record of these birds east of Indiana.

If you are from up-state New York and unfamiliar with water birds, come to the Finger Lakes a-birding in winter or early spring and enjoy making the acquaintance of some birds rarely seen by the inland bird student.

—o—

Biological Survey Promotes Study of Birds by Banding

Since 1920 the United States Bureau of Biological Survey of the Federal Department of Agriculture has promoted and sponsored the study of birds through the banding method. The scope of this work in indicated in a report recently issued by the Survey. Following is a tabular summary of the numerical status of the undertaking. These figures carry through the fiscal year ending June 30, 1937.

Total number cooperators.....	2 129
Total number birds banded, 1920 through 1937	2 482 044
Total number returns since 1920...	152 964
Birds banded, fiscal year 1936–37...	300 894
Returns, fiscal year 1936–37	17 011
Total number species represented in bandings	536+

Photographing the Black-crowned Night Heron

ALLAN D. CRUICKSHANK, NATIONAL ASSOCIATION OF AUDUBON SOCIETIES

Photographs by the author

As I approached the colony at 7.30 o'clock that cloudless morning all was quiet save for occasional low squawks and groans. A few solitary birds were winging their way back from the marshes of Long Island sound. Wending my way across the wooded swamp my heart beat fast with excitement and my mind reviewed the plans and questioned whether the trick would work. You see, three days before I had entered this black-crowned night heron colony, had nailed an old rusty tin can up in a leaning tupelo near a nicely exposed nest, and had built a small hideaway of brush in a thicket below. Surely by now the birds had accepted these minor additions to the landscape! I would take down the old rusty tin can and put my similarly shaped and colored camera there instead; then I would crouch in the hideaway and try for pictures of these interesting birds.

Suddenly the quietness of dawn was rudely broken as hundreds of night herons flapped from the trees squawking, barking and screeching as only night herons can. I had reached the edge of the breeding grounds. And then bedlam broke loose as I progressed into the heart of the colony to the base of my chosen tree. After much excitement amidst showers of rich pungent whitewash the camera was firmly in place and I lay motionless in my retreat with a fine black thread leading to the trigger of the camera.

The Four Pale Blue Eggs Are Laid in a Shallow, Flimsy Nest of Small Branches

A Month Later Four Fellows Like This Were in the Leaning Tupelo

In 35 minutes the birds started to return, cautious, alert, but nevertheless willing to battle with one another for perches on favorite trees. Soon a pair alighted on the leaning tupelo, one bird passive, the other, which I took to be the male, excitedly displaying his plumes, ruffling his breast and occasionally stretching his neck forward before emitting a piercing hiss. I held my breath, seemingly for minutes, as the bird I took to be the male began working his way down through the entanglement of branches. But then he paused, looked up at his mate and mumbled and groaned, evidently encouraging her to follow him to the nest. She proved to be a truly stubborn female, however, for 15 minutes passed before she took a single step. And then slowly, nervously the descent was made; she edged up to the male bird and they clicked

As the Adult Settles She Parts Her Breast Feathers To Bring Her Exposed Brooding Spot in Contact with the Eggs

bills and tenderly nibbled one another about the neck. It was a revelation to see grotesque night herons going through such a touching bit of courtship. His love desires satisfied, the male flapped away, leaving his mate a few feet above the four pale blue eggs. Ever eyeing the camera with suspicion, she worked her way down to the nest, stamped about as if testing for weak spots in the structure, and then parting her breast feathers, commenced to settle on the eggs. At that moment my eager twitching fingers pulled the thread, the thread pulled the trigger of the camera, there was a loud click and the startled heron went squawking over the swamp, setting the entire colony in an uproar. I took this opportunity to mount the tree, change the film and reset the camera. Another 45 minutes of entrancing observations passed before a second exposure was made and then back through the swamp and home to my dark room, anxious to see the morning's photographic results.

A264m-Mr38-14,000(16097)

UNIVERSITY OF THE STATE OF NEW YORK PRESS